

## REMARKS

### Introductory Comments

Claims 1, 3-9, 11-12, 15-18, 22-23, and 29 are pending in the application. Claims 17-18 and 23 are withdrawn from consideration due to a restriction requirement. The status of claim 12 is unclear because the office action contains conflicting statements with respect to claim 12. Claim 29 is amended herein. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

### Improper Finality

For the reasons explained in the concurrently filed “PETITION TO REMOVE FINALITY OF OFFICE ACTION,” it is submitted that the finality of the office action is improper and should be withdrawn.

### Improper Restriction Requirement

For the reasons explained in the concurrently filed “PETITION TO THE DIRECTOR TO REVIEW REQUIREMENT OF RESTRICTION UNDER 37 CFR 1.144,” it is submitted that the restriction requirement is improper and should be withdrawn.

### Unclear Status of Claim 12

Office Action Summary indicates that claim 12 is rejected. The section of the office action entitled “Response to Arguments” (see page 5 of the office action) similarly indicates that claim 12 is rejected on new grounds. However, the substantive rejection of claims under 35 U.S.C. § 103 presented on pages 3-5 of the office action does not mention claim 12 at all. Thus, the office action does not properly reject claim 12.

Claim 12 is mentioned in the first line of the section entitled “Election/Restrictions” (see page 2 of the office action). However, neither Office Action Summary nor the Election/Restrictions section itself indicates that claim 12 is withdrawn from consideration. Thus, the office action has not withdrawn claim 12 from consideration.

In view of these conflicting indicators, the status of claim 12 is unclear. The Applicants therefore respectfully request appropriate correction/clarification.

### Failure to Reject Claim 22

Office Action Summary indicates that claim 22 is rejected. The section of the office action entitled “Response to Arguments” (see page 5 of the office action) similarly indicates that claim 22 is rejected on new grounds. However, the substantive rejection of claims under 35 U.S.C. § 103 presented on pages 3-5 of the office action does not mention claim 22 at all. Thus, the office action does not properly reject claim 22.

The Applicants submit that, because the Examiner failed to reject claim 22, **the next office action cannot be properly made final**. For guidance on this point, the Examiner is respectfully referred to MPEP § 706.07(a), which explicitly prohibits making the rejection final “where the examiner introduces a new ground of rejection that is neither necessitated by applicant’s amendment of the claims, nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c).”

Rejection of Claims 1, 3, 6-7, 9, 11, 15-16, and 29

*On page 3 of the office action, the Examiner rejected claims 1, 3, 6-7, 9, 11, 15-16, and 29 under 35 U.S.C. § 103(a) as being unpatentable over Lubbers in view of Crothall.*

Support for the amendment of claim 29 can be found, e.g., in previously presented claim 1. Claim 1 recites:

an optical multiplexer adapted to multiplex the light generated by the light sources and direct resulting multiplexed light to the optical fiber for interrogating the sensors of the plurality of sensors;

an optical de-multiplexer adapted to receive from the optical fiber light reflected from the sensors of the plurality of sensors during the interrogation and decompose the received light into a plurality of optical components, wherein each of the optical components corresponds to a different respective sensor of the plurality of sensors; and

a plurality of optical receivers, each adapted to receive a respective optical component of the plurality of optical components.

In the rejection of claim 1, on page 3 of the office action, the Examiner states that “Lubbers utilize dichroic mirrors, which examiner considers as optical receivers.”

In response, the Applicants submit that it is well established in the optical arts that an optical receiver is a device that converts light into electricity, e.g., using the photoelectric effect (see, e.g., <http://www.timbercon.com/Optical-Receiver.html> or [http://en.wikipedia.org/wiki/Fiber-optic\\_communication#Receivers](http://en.wikipedia.org/wiki/Fiber-optic_communication#Receivers)). Since dichroic mirrors do **not** convert light into electricity, Examiner’s interpretation of dichroic mirrors as examples of optical receivers recited in claim 1 is not consistent with and contradicts to the established meaning of the term “optical receiver” and, as such, is improper.

On page 4 of the office action, the Examiner admits that Lubbers does not teach examples of an optical multiplexer and an optical de-multiplexer recited in claim 1. To remedy this admitted deficiency of Lubbers, the Examiner cites and relies on Fig. 1 of Crothall.

First of all, the Applicants submit that neither Lubbers nor Crothall discloses an example of “an optical de-multiplexer” recited in claim 1. Moreover, Crothall teaches away from using an optical de-multiplexer by repeatedly and consistently specifying that individual laser diodes **30** are pulsed sequentially and not simultaneously (see, e.g., Crothall’s Fig. 1; col. 11, lines 60-67; col. 12, lines 4-6 and 25-28; col. 13, lines 9-11). The sequential pulsing of laser diodes **30** enables the system of Crothall to detect multiple wavelengths using a single photodetector **44**. As a result, the system of Crothall does not need and does not have an example of the optical de-multiplexer recited in claim 1.

Second, the Applicants submit that neither Lubbers nor Crothall discloses an example of “a plurality of optical receivers” recited in claim 1. More specifically, Lubbers discloses the use of a single photodetector **11** (see, e.g., Lubbers’ Figs. 1 and 3). Similarly, Crothall discloses the use of a single photodetector **44** (see, e.g., Crothall’s Fig. 1).

It therefore follows that the combination of Lubbers and Crothall fails to explicitly teach or fairly suggest the combination of features recited in the above-quoted portion of claim 1, notwithstanding the Examiner’s assertions to the contrary.

For all these reasons, the Applicants submit that claim 1 is allowable over the cited references. For similar reasons, the Applicants submit that claim 29 is also allowable over the cited

references. Since claims 3-9, 11-12, 15-16, and 22 depend variously from claim 1, it is further submitted that those claims are also allowable over the cited references. The Applicants submit therefore that the rejections of claims under § 103 have been overcome.

#### Conclusion

In view of the above amendments and remarks, the Applicants believe that all pending claims are in condition for allowance. Therefore, the Applicants believe that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

#### Fees

During the pendency of this application, the Commissioner for Patents is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR 1.16 and any patent application processing fees under 37 CFR 1.17 or credit any overpayment to **Mendelsohn, Drucker, & Associates, P.C. Deposit Account No. 50-0782**.

The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR § 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Respectfully submitted,

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